In the Specification:

Please amend the specification as shown:

Please delete paragraph [0020] and replace it with the following paragraph:

[0020] Figures 1A – 1C outline the generation of error-free amplified DNA via hairpin PCR. In Figure 1A, the scheme for removing PCR errors following amplification of DNA in a hairpin structure is shown. Figure 1B shows the expected structure and sequence of hairpin A **(SEQ ID NO: 1)**. Figure 1C shows the expected structure and sequence of hairpin D **(SEQ ID NO: 2)**, an oligonucleotide encompassing both top and bottom strands of p53 exon 9.

Please delete paragraph [0024] and replace it with the following paragraph:

[0024] Figure 5 **(SEQ ID NOS 18 & 19-20, respectively)** depicts the use of hairpin-shaped DNA as a detector for radiation and/or chemical exposures. The DNA strand breaks off following a strand break anywhere in the shaded area (target), thereby allowing the primers to bind and to PCR amplify the DNA segment. The amount of PCR amplification is proportional to how many DNA molecules undergo strand breaks and therefore it can be used to quantify the amount of radiation or chemical agent interacting with the DNA. Finally, the fraction of DNA molecules that remain intact can be re-amplified by using primers binding to the non-complementary linkers, thereby regenerating the original DNA detector molecule.

Please delete paragraph [0025] and replace it with the following paragraph:

[0025] Figure 6 shows amplification of hairpins using rolling-circle amplification (RCA). The hairpin-shaped oligonucleotide **(SEQ ID NO: 21)** of Figure 6A was self-ligated to form a closed 'dumbbell-like' structure resembling the structures used for RNA-interference. The dumbbell was then amplified in an isothermal rolling-circle amplification reaction using Phi29 polymerase (from New England Biolabs) and random primers. Following digestion of the RCA product with Alu, the amplified hairpin-dimer DNA was recovered. Figure 6B shows in lane 1, no Alu digestion; in lane 2, digestion with Alu. The amplification is about 1000-fold. In another example, the hairpin-shaped oligonucleotide **(SEQ ID NO: 22)** of Figure 6C was self-ligated to form a closed 'dumbbell-like' structure, and then amplified in an isothermal rolling-circle amplification reaction using Phi29 polymerase (from New England Biolabs) and random primers. Following digestion of the RCA product with Nla-III, the amplified hairpin-dimer DNA was recovered. Figure 6D shows in lane 1, no digestion Nla-III; lane 1: with Nla-III digestion). The amplification is about 500-fold.